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LEAD And your kids Disturbing New Evidence About the Threat to Their Health How to Protect Them

Newsweek

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MEMBER

LEAD AND YOUR KIDS

Public-health officials say lead is the No. 1 environmental threat to children—whether they live in public housing or neat suburban homes

BY STEVEN WALDMAN

When Helene and Bruce Tackling found their two-story house in New London, Conn., in December 1989, they called it "our Christmas miracle." It seemed perfect. On the very same street where Bruce grew up, it had two parks nearby, a big backyard and enough space so their 2-year-old, Jessica, and the baby on the way could have their own bedrooms. It needed some renovation, but Bruce was handy with a Spackle knife and the family moved in on March 1, 1990.

Bruce immediately went to work, scraping the old paint off the pantry and sanding the bathroom walls down to the original wood. The place was looking sharp. But within months of moving in, the children had become increasingly demanding and irritable. Nicholas, the new baby, wouldn't stop crying, his voice sometimes locking into a continual eerie scream, "like he wasn't even awake," says Helene. Doctors said it was colic, and nurses told her to feed him bananas and rice. Jessica kept complaining of stomachaches, but check-

ups found nothing wrong. One day Helene was cleaning out a filing cabinet when she found a pamphlet on lead poisoning, which she vaguely recalled as a disease kids used to get from chewing pencils. But the symptoms listed matched her children's behavior, so she called her pediatrician's office. The nurse said not to worry. "She's not eating paint chips, is she?" the nurse asked. Helene had never seen the kids eating paint chips, and she

Nicholas McFadden of Baltimore undergoes painful chelation therapy to cleanse some lead from his body. His serious poisoning kept him in the hospital for six weeks.





Helene and Bruce Tackling in the hallway of the New London, Conn., house where their children Jessica (left) and Nicholas got lead poisoning. By stripping the doorframe behind them, they had increased the hazard.

PHOTOS BY JOHN FICARA—NEWSWEEK

regularly vacuumed any peeling paint.

But this April, the Tacklings learned that much of what they and most Americans believed about lead poisoning was wrong. Tests showed both Jessica and Nicholas had lead poisoning. They probably got it not from eating paint chips but from fine paint dust—stirred up in part by the renovations Bruce did to make the house just like new and the vacuuming Helene did to make it pristine. Helene consoled herself by thinking they had caught it early enough so doctors could cure her kids. Doctors had to repeatedly tell the disbelieving mother the disturbing news: damage from regular exposure to lead is usually irreversible. It's too early to tell how the lead has affected them, but odds are, Jessica and Nicholas will not be quite as intelligent as they were born to be. "I'm living it every single day, every single day," says Helene. "I just think of this nightmare. I look at my children and wonder what I've taken away from them."

A Silent Hazard

Seventy-four percent of all private housing built before 1980 contains some lead paint.

Three million tons of old lead line the walls and fixtures of 57 million American homes.

One of nine children under age 6 has enough lead in his blood to place him at risk.

Children with high lead levels are six times more likely to have reading disabilities.

SOURCES: DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT; CDC ADVISORY COMMITTEE; JOEL SCHWARTZ, SENIOR SCIENTIST, EPA; HERBERT NEEDLEMAN STUDY

Lead poisoning? Most middle-class parents would have the same reaction as Tacklings: denial and disbelief. Isn't lead poisoning something that happens only in the ghetto, where poor children eat flakes of paint? On the surface, the incredulity makes sense. The federal government did, after all, ban the use of lead-based paint in 1978, and phase out most lead in gasoline in the 1980s. Kids today on average ingest far less lead than their parents did—and they don't seem to have suffered an epidemic of lead poisoning. There shouldn't be a problem at all, let alone one affecting people in decent houses. Yet the fact is that lead poisoning is now being called the nation's No. 1 environmental threat to children—not by Greenpeace or Ralph Nader, but by top officials of the Bush administration. To be sure, some liberals of late have excitedly spotted lead as a politically attractive "children's issue." But the new assessment of lead's dangers comes from scientists and public-health officials who

have formed two conclusions: first, while government stopped new lead from being poured into the environment, it never actually dealt with the 3 million tons of old lead that line the walls and fixtures of 57 million private American homes. More important, in the past 10 years research has clearly demonstrated that even small doses of lead can slow development and make children less intelligent.

Risky zone: According to Joe Schwartz, a senior scientist at the Environmental Protection Agency, one out of nine children under age 6 has enough lead in his blood to place him in what scientists now consider the risky zone. U.S. Public Health Service estimates place the figure as high as one in six. In the inner city, approximately one out of two children falls in that range. The U.S. Centers for Disease Control will issue new guidelines in the next few months that contain a dramatic message for doctors and public-health officials: lead is a much more serious hazard than we thought, and families and the government should take action well before children show obvious symptoms. "Lead poisoning is entirely preventable, yet it is the most common and societally devastating environmental disease of young children," says Dr. Louis Sullivan, secretary of Health and Human Services.

In a nation that bans food colorings because they may harm one person in a million, the concept that one out of nine children is adversely affected by lead seems hard to believe. Is it possible that so many

of our children are brain damaged? Obviously not. But several hundred thousand of them have absorbed enough lead to significantly slow their minds and alter their behavior. Roughly 2 million others have slightly elevated blood-lead levels without obvious symptoms or intellectual damage. The lead industry argues that scientists still have not proven that small doses of lead really damage kids. But they agree with public-health officials that parents can greatly reduce the risk of any harm by taking a few simple steps (page 46). Chief among them is changing the way they think about the paint on their walls.

The lead problem persists because lead paint persists. Paint manufacturers removed much of the lead from paint in the 1950s. But the failure of the government to address lead hazards in housing—and the unwillingness of interest groups to push them—has meant that most of the paint remains in the same houses that got coats 40 or more years ago. Seventy-five percent of all private housing built before 1980 has some lead paint, according to a 1990 report by the U.S. Department of Housing and Urban Development. Middle- and upper-income families are as likely to have lead paint in their homes as the poor, the report found, and homeowners were as likely to have it as renters. The mere presence of lead-based paint doesn't harm children, but HUD reported that 20 million of those leaded houses have too much lead dust or chippings—about 20 percent of the entire

Five of Wanda Johnson's eight children have suffered lead poisoning in Baltimore. Approximately half of inner-city children have high levels of lead in their blood.






housing stock—and 3.8 million of those homes had children living in them.

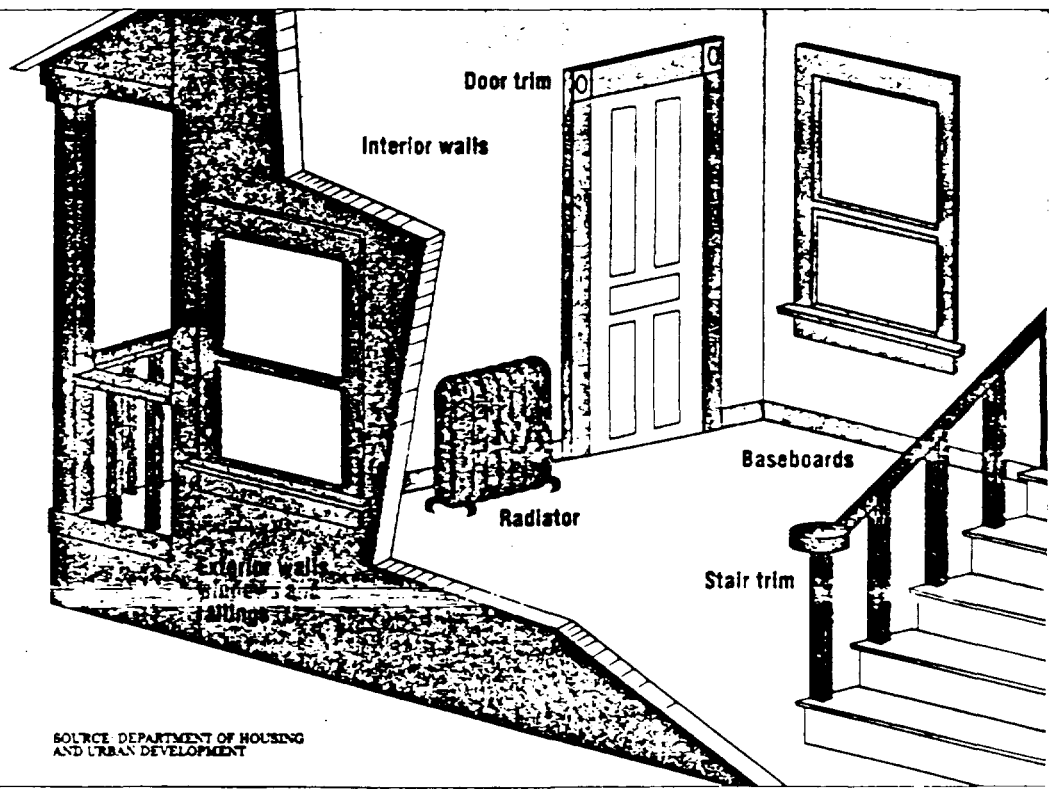
Two of those children were 4-year-old Nicholas McFadden and his older sister Chrystal Files of Baltimore. Chrystal almost certainly got lead poisoning from living in a run-down apartment when she was 4 years old. Their mother, Stephanie Poole, found another apartment that, she says, looked safe: smooth walls, intact baseboards. But she didn't know to look for

Where Lead Is Found

Different surfaces in a home pose varying lead-paint risks. Friction from opening and closing windows can turn hazardous exterior paint into lead dust, which can be ingested by people inside. If intact, large interior surfaces, like walls and ceilings, are far less likely to pose a danger.

Where Lead Is Found in the Home:

-  Very frequently
-  Frequently
-  Occasionally



SOURCE: DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT



JOHN FICARA—NEWSWEEK

paint dust or tiny loose chips, which were plentiful on the windowsill in Nicholas's playroom. Within a year of moving in, Nicholas had severe lead poisoning.

Poole now has to observe the consequences. Last month she stood anxiously in the hallway at the Kennedy Institute in Baltimore, afraid to look in the room where Nicholas was undergoing a painful treatment called chelation, which uses injections to cleanse the blood of some lead. When Chrystal entered first grade last fall, Stephanie watched as the other kids whizzed through drills on vowels and consonants, while Chrystal gazed blankly out the window. She is far behind the other kids in spelling and math. "I'm hoping she's just slow," Stephanie says, tears welling, "and there's not something wrong with her."

Only in the past decade have researchers focused on how lead damages development, even when kids don't show obvious medical symptoms. In the 1970s, the CDC defined lead poisoning as occurring when a child had 30 micrograms of lead per deciliter of blood (30 $\mu\text{g}/\text{dl}$), the level at which problems like anemia, stomach ailments and noticeable learning troubles appear. But a 1979 study by Dr. Herbert Needleman, then a physician at Children's Hospital in Boston, found that asymptomatic working-class children in Chelsea and Somerville, Mass., who had higher lead residues in their teeth performed worse on IQ and development tests than those with less lead. A subse-

quent follow-up study showed that children with lead levels equal to 25 to 35 $\mu\text{g}/\text{dl}$ were six times more likely to have reading disabilities and seven times more likely to drop out of high school.

The Needleman study was one of the first that tried to factor out other possible explanations such as family stimulation and parental IQ, and it triggered a wave of research on low-level effects of lead. A 1987 study of 249 mostly middle- and upper-middle-income infants in the Boston area reported that those exposed to 10 to 25 $\mu\text{g}/\text{dl}$ of lead in the womb lost four to six points on developmental tests measuring memory, learning and tasks like putting pegs into a board or naming parts of a doll. A 1987 study of 501 children in Edinburgh,

Scotland, found that those with average blood levels of 11 $\mu\text{g}/\text{dl}$ suffered similar intelligence losses, while another Scottish study reported that children with slightly elevated blood-lead levels were more likely to be considered hyperactive or aggressively antisocial by their teachers. Other studies have linked low-level exposure to hearing loss, slower reaction time, reduced attentiveness, delays in the age at which children first walk and problems with balance. In part because of these studies, the CDC in 1985 lowered the definition of lead poisoning to 25 $\mu\text{g}/\text{dl}$, where it remains. The CDC is planning to draw new warning lines below that number, advocating family or community action between 10 to 25 $\mu\text{g}/\text{dl}$. It has not yet decided what level should be labeled lead "poisoning." "The more we learn, the more toxic we find it to be," says James Mason, head of the U.S. Public Health Service.

No unanimity: While there is a strong consensus that lower levels of lead cause damage, there is no unanimity. Studies financed by the lead industry have found little damage at low levels, and one independently funded study found that early intelligence losses associated with lead may fade in later years. "You see tremendous inconsistencies among the results," says Rosalind Volpe, a consultant with the International Lead Zinc Research Organization, an industry-sponsored group. The key health statistic, according to Jeffrey Miller, spokesman for the Lead Industries Association, is that average blood levels have dropped dramatically in recent decades, from 17 $\mu\text{g}/\text{dl}$ in 1978 down to about 6 $\mu\text{g}/\text{dl}$ now. "One might get the sense it's a billowing epidemic, when in fact the opposite is true," he says.

It's a fair point, which makes one won-



Mark Rosenbaum and Barbara Fascher of Los Angeles flew in a contractor from Massachusetts to repair their house after discovering that Samara had slightly too much lead in her blood.

The Francoeurs were lucky because they live in Massachusetts, the only state that requires mandatory testing of children for lead poisoning. Several states and cities have aggressive programs to screen inner-city children for lead poisoning. But all those programs together in 1985-86 tested just 800,000 kids, about 4 percent of children under age 6. And pediatricians of middle-class kids test even less frequently than those of the poor.

It takes strikingly little lead to cause lead poisoning. A child can become severely lead poisoned (60-80 $\mu\text{g}/\text{dl}$) by eating one milligram of lead-paint dust—equivalent to about three granules of sugar—each day during childhood. To achieve blood-lead levels of 35 $\mu\text{g}/\text{dl}$, a child would have to eat just the equivalent of one granule of sugar a day. That's why a child can become ill merely by regularly touching a windowsill and then sucking his thumb. Why is lead so toxic? The body, in effect, mistakes it for calcium. The lead attaches to and disrupts enzymes essential to functioning of the brain and other cells. Because lead is an element, it never decomposes into another, more easily tolerated, substance. While it

can be removed from the bloodstream through chelation, most of the lead that is absorbed into a child's brain sits there, literally, forever.

Children are most likely to get lead poisoning between the ages of 6 months and 6 years, when lead dust from carpeting, toys or the floor is more likely to find its way into their mouths. (An adult can tolerate larger doses.) If exposed, developing fetuses are the most vulnerable of all. Sometimes mothers subject their children to lead by eating, drinking or breathing lead during pregnancy. Researchers are now examining theories that women store lead in their bones and years later may withdraw it, along with the calcium, during pregnancy and pass it on to their fetuses. Sandra Roseberry of Portsmouth, N.H., probably passed lead on to her daughter Julianne by stripping wallpaper during pregnancy. Julianne's blood-lead level went as high as 100 $\mu\text{g}/\text{dl}$.

Although a less serious culprit than paint, drinking water can raise blood levels, too. When Vice President Dan Quayle recently had his Washington mansion tested, he was disturbed by the levels of lead

found in the water. The Environmental Protection Agency estimates that lead in water causes 10 to 20 percent of overall childhood lead exposure.

New prism: The new science about lead's effect on the brain may force policymakers to re-examine some social issues through a new prism. For example, if lead can cause aggressive behavior, learning disabilities and hyperactivity, might it not also be a contributing factor in poor educational performance among low-income blacks, who suffer the most lead poisoning? "The education community has not really understood the dimensions of this because we don't see kids falling over and dying of lead poisoning in the classroom," says Bailus Walker, dean of the public-health school at the University of Oklahoma and former commissioner of public health in Massachusetts. "But there's a very large number of kids who find it difficult to do analytical work or [even] line up in the cafeteria because their brains are laden with lead."

It's not just the educational community that has ignored the problems of lead. Civil-rights advocates, environmental lobbyists, even children's welfare advocates have un-

a qualified contractor. An improperly done abatement will make things worse. The safest approach is encapsulating, covering or removing painted structures entirely. Scraping or using a heat gun can be trouble if done improperly. Power sanding and open-flame burning are almost always danger-

ous. Complete removal can cost thousands of dollars, but you might significantly reduce the hazard by replacing doors, window frames or contaminated carpeting, or by putting up wallpaper or paneling. Consult the health department about what to do with the lead-ed waste.

Hiring a contractor: If your local health department doesn't have a list of recommended contractors, try the regional office of the U.S. Department of Housing and Urban Development. On the East Coast, call the Massachusetts Department of Labor and Industry (617-727-1932), or Maryland's Department of Environment (301-631-3859). Some contractors may be listed in the phone book under lead, others under asbestos. Grill them to ensure they're qualified: Have they been through a special lead-paint-abatement training program? What kind of cleanup do they do? What kind of precautions do they take for workers?

Doing renovations: If you have lead-based paint, the safest approach is to send kids away from home until work is done and the house has been thoroughly cleaned. If that's impossible, seal off the rooms being renovated and clean well.

Exterior paint: Watch out during warm weather when children play on the porch or in a front yard. People can also track lead dust into the house.

Buying a house: Most inspections do not test for lead paint.

Try to test and abate before you move in.

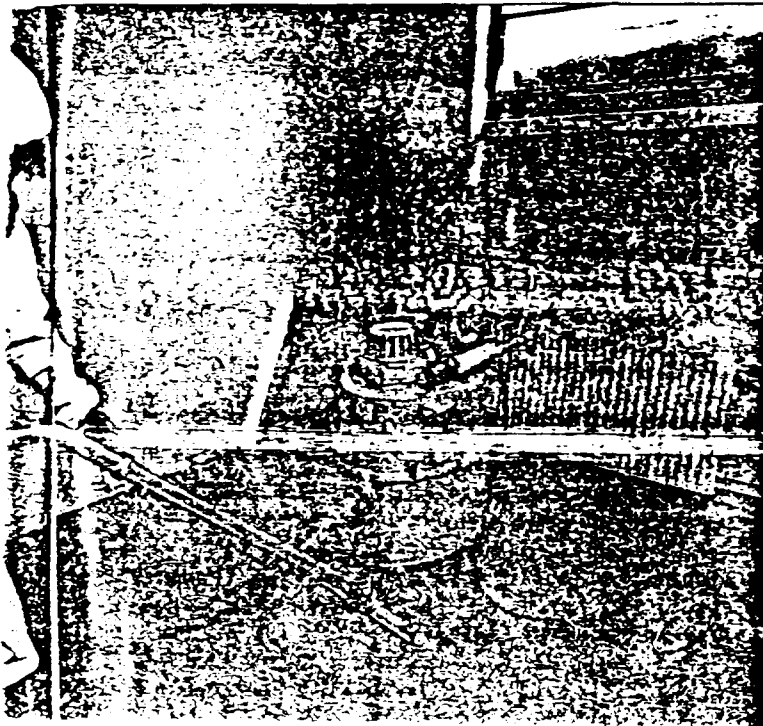
Testing drinking water: Ask your local water supplier for the names of EPA-certified laboratories that will test your water for \$15 to \$35. EPA considers water safe if it has less than 15 parts per billion of lead, although some doctors and advocacy groups call for less than 10. You should test if you have water from a drinking well, pipes with lead solder or water known to be very corrosive. EPA has a safe-drinking-water hot line that may help answer questions (800-426-4791). If water has too much lead, reduce risk by running the faucet for a minute. When cooking or washing vegetables use cold water, which is less likely to pick up lead. Be wary of water-filter scam artists; most filters don't work on lead.

Ceramic dishware and lead crystal: Some imported ceramic dishes have lead in them. Test with a home kit. Don't store liquids in lead crystal; the lead may leach out. It's fine to use it for serving.

STEVEN WALDMAN with
DORIS IAROVICI

cleans a Baltimore public-housing unit using a HEPAvac

JOHN FICARA—NEWSWEEK



der: if lead is so bad, why aren't half of today's adults suffering the effects of childhood lead poisoning? The answer is that many probably are, but couldn't possibly know it. "I guess we all might have been a little smarter than we turned out," says David Bellinger, a lead researcher at Harvard University. "It's hard to tell if someone goes from 140 IQ to 135."

The changing notion about how kids get poisoned is altering beliefs about who gets poisoned: if children can get lead poisoning without eating peeling paint, they can get it without living in dilapidated housing. The Children's Hospital in Boston reports that from 1987 to 1990, 40 percent of its infant-poisoning cases resulted from victims ingesting dust while the family, often well-to-do, renovated an old house. The daughter of a financial consultant and a management consultant became sick from renovations on an old farmhouse in Concord, Mass. Paul and Gerry Francoeur's 3-year-old daughter, Heather, seems to have gotten lead poisoning from playing in her sandbox, which apparently became contaminated with lead dust after her father sanded paint off the house's exterior.

Marc and Cathryn Perrone did extensive research on the safest way to remove lead paint from their home in Milwaukee. But the information they got was wrong, and their baby Miranda (in Cathryn's arm's) was poisoned.



BUCK MILLER

Is Your Home Safe? Here's How to Check

Testing your child: Children should be tested for lead poisoning unless they live in areas where widespread screening has revealed no problem, according to the Centers for Disease Control's advisory committee on lead. It recommends screening at 12 months and then again at 24 months. High-risk kids (from older run-down homes) should be tested earlier and more often. Make sure doctors use the "blood-lead test" instead of the FEP (Free Erythrocyte Protoporphyrin) test, which is extremely inaccurate. If results show elevated levels, get a confirmation test because even the blood-lead tests are inaccurate. The blood-lead test should cost about \$30.

What level is dangerous? Many doctors mistakenly believe that a blood-lead level under 25 micrograms per deciliter (written "25 µg/dl") is safe. But the CDC is about to establish 10 µg/dl as the level above which some sort of action should be taken. A child with a blood-lead level of 10-

15 µg/dl is not in imminent health danger but should be tested again three months later. If the lead level has not declined, the family should take steps to pinpoint and remove hazards by cleaning thoroughly and testing paint, drinking water and other potential sources (below). Make sure your child gets enough iron and calcium. If the level is more than 15 µg/dl check with a doctor for a nutritional and medical assessment.

Who is most at risk? If your home was built before 1950, you probably have some lead paint, but others may have it, too. The Northeast, Midwest and Western states have more lead than the South.

Testing your paint: If your local health department won't test, two home kits have been rated by Consumers Union to be effective tests for highly leaded painted surfaces. LeadCheck Swabs are sold by HybriVet Systems Inc. (800-262-LEAD). Frandon Lead Alert Kit is sold by Frandon Enterprises, Inc. (800-359-9000).

Lead paint but no signs of trouble: If your child's blood-lead level is below 10 µg/dl and the house has no cracking, peeling paint, don't panic. Odds are, renovations to remove the paint will just increase the dust level. Scrutinize windowsills, baseboards and doorframes, where friction grinds up the paint layers and creates lead dust. Watch for dust, not just peeling. To remove the dust, damp-mop or wipe with a high-phosphate detergent. Ask for trisodium phosphate washes (TSP) at paint or hardware stores. (It may not be available in some states.) Consider joining with other tenants or homeowners to buy a HEPAvac (High Efficiency Particulate Air Filtered Vacuum), which costs about \$1,000, for an occasional superscrubbing, or check with the health department to see if one can be rented. Other experts recommend scrubbing with a TSP-drenched sponge. Or use a wet-and-dry or shop vacuum with this procedure: sponge down all smooth surfaces with TSP

soap twice. Wet-mop the same surfaces using a solution of diluted high-phosphate soap. Make sure the surfaces are plenty wet and then clean with the shop vacuum.

Removing lead from a home: Do not attempt a full-scale abatement yourself. If tests show you have a major hazard, hire

Squeaky clean: A workman



til recently done almost nothing about lead. The inaction stems mostly from two contradictory beliefs: that the problem had been solved and that it is too big to solve (removing old paint would be a gargantuan task). Congress gave most of the responsibility for solving the lead-paint problem to the HUD in 1971. But HUD has done little about most private housing, and in government-assisted housing it has regulated only peeling paint, whether it has lead in it or not. Many localities still believe they only have to fix peeling paint up to five feet high on walls, ignoring both the laws of Congress and gravity. When trying to promote research about lead, HUD has had mixed results too. In 1975, for example, it paid the Johns-Manville Corp. to find a way of sealing off lead paint. Incredibly, Mansville suggested covering it with asbestos.

The failure for years of government and liberal advocates to focus on lead has been so stark that it begs an uncomfortable question: have attitudes about race and poverty affected people's willingness to take on this problem? Consider Wanda Johnson, a welfare mother from Baltimore with eight children—five of whom have suffered from lead poisoning. Psychological tests have shown her poisoned kids far behind their age group, yet their future teachers or bosses may not have expected much more anyway. "They're going to walk around with a 10-pound weight," says James Ruffin, a University of Maryland School of Law student who tried to force the Johnsons' landlord into making repairs. "But most people are just going to assume they're naturally slower and lazier."

New research and an awareness that lead hazards touch people like the Tacklings of New London, Conn., as well as the Johnsons have helped prod the govern-

Lead and Money

There are 3.8 million homes with peeling lead paint or lead dust inhabited by children under the age of 7.

52% of these families have an annual income less than \$30,000; 48% have incomes more than \$30,000.

Two thirds of the families with incomes less than \$30,000 per year rent their homes.

More than 75% of the families with incomes over \$30,000 per year own their homes.

SOURCE: DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ment into stronger action in the past two years. After years of delay, EPA in May issued rules attempting to reduce lead in drinking water. HUD has, for the first time, asked for funds to de-lead private housing, and is writing rules on how to improve a house through small, practical steps without ripping it entirely apart. One bill being drafted in Congress by Rep. Henry Waxman would require house sellers to notify prospective buyers of lead paint. The most important governmental action will be CDC's new guidelines for doctors and public-health professionals. But CDC faces a dilemma: how to make people more

aware of lead's hazards without creating a stampede of hysterical parents. Health departments and medical labs could not now handle a surge in demand for blood tests. And outside Massachusetts or Maryland, few contractors are actually qualified to test and remove lead.

Over the next few years, parents' concern will likely rise faster than the understanding of what they should or shouldn't do. When Baltimore began publicizing lead hazards in the early 1980s, about half the poisoning cases treated by the Kennedy Institute resulted from houses that had leaded paint improperly removed. Marc and Cathryn Perrone of Milwaukee actually consulted an engineer to find out how to get rid of old lead paint safely. They decided on a heat gun. After they'd stripped most of the paint, they learned that heat guns were very dangerous. When they tested their kids, their daughter Miranda, then 21 months old, had a 33 $\mu\text{g}/\text{dl}$ reading.

\$70,000 job: Mark Rosenbaum, a lawyer in Los Angeles, had already renovated his 85-year-old house when he decided to have his 16-month-old daughter, Samara, tested. The tests revealed a blood level first of 8 $\mu\text{g}/\text{dl}$ and then of 12 $\mu\text{g}/\text{dl}$. The family moved out right away. Tests of the house showed lead dust on the floors and carpets, but the Rosenbaums couldn't find a contractor in all Los Angeles who knew how to remove the lead-based paint. "You go to the Yellow Pages for lead abatement and you might as well be looking for krypton abatement," he says. They flew in a licensed professional from Massachusetts. The cost: \$70,000.

The Rosenbaums' experience was harrowing, but it should be kept in perspective. Research has shown that if the exposure to low doses of lead is halted early, parents can

make up for most potential learning deficits through good diet and extra stimulation. It's unlikely that paint dust will really alter Samara's life. And Rosenbaum is lucky in another way. As general counsel of the American Civil Liberties Union in California, he was able to vent his anger by helping sue California for not testing enough for lead poisoning. But most families won't take such dramatic steps, or, for that matter, test their own children. The problem for them isn't lack of money or legal expertise. They simply don't realize—or can't believe—that the dust on their windowsill might be quietly stealing part of their child's potential.

With DEBRA ROSENBERG
in Boston and
PATRICK ROGERS in Milwaukee

IRA WYMAN FOR NEWSWEEK

Doctors believe Julianne Roseberry of Portsmouth, N.H., probably got lead poisoning because her mother worked with lead-based paint during pregnancy.



Washington Post
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The Lethal Legacy of Lead Poisoning

Long After a Battery Plant Shuts Down, Contamination Lingers in Soil and Bones

By Mark Jaffe
Lehigh Valley News

THROOP, Pa.

From morning to night, for 14 hours straight, residents of this northeast Pennsylvania community arrived at the local high school for medical tests they feared would uncover a long-buried problem.

Moving slowly from gymnasiums to classrooms, they filled out health histories, gave blood and were subjected to a battery of tests to measure such things as nerve response and motor skills. The final stop was a 35-foot-long Chevy van parked nearby. There, each resident slid his or her leg into a new X-ray machine that screened their bones for lead.

After five days of testing, John Rosen, one of the nation's leading experts on childhood lead poisoning, announced the results. One third of the 200 residents he tested had elevated levels of lead in their bodies. Many of them were children.

For years, residents had wondered whether the old Marjol Battery & Equipment Co. was polluting their town. Black clouds of smoke had belched from the battery recycling plant and wafted over nearby neighborhoods. Acid mists had eaten holes through clothing hanging out to dry.

Yet even when lead contamination was found in nearby yards and streets in 1975 and again in 1986, government environmental officials had assured residents there was no health problem. Not trusting the official assessment, they sought the help of Rosen, who told them their fears were realistic. The problem, Rosen concluded, was lead poisoning, a hidden and lingering problem that might affect countless children and adults in other communities.

Lead is a highly toxic material. Children are particularly susceptible because the metal can damage the growing nervous system, creating nerve disorders and learning disabilities.

Because many of the effects are subtle and difficult to detect, and because the threat of lead poisoning had lingered for so long, residents here were skeptical of government reassurances.

"We had a situation where our children had been playing in a heavily contaminated environment," said Nicholas Mutoa, a school psychologist and father of four children. "We wanted answers, and we didn't trust the government."

Throop's search for an answer led residents to an experimental technique that looks for lead in the bones. Traditionally, doctors have measured lead exposure in the blood, where the substance is most toxic and may cause permanent damage. But the metal lingers in the blood only 30 to 45 days.

"Ninety-five percent of the body burden of lead is stored in the bones," said Andrew Todd, a professor of medical physics at the

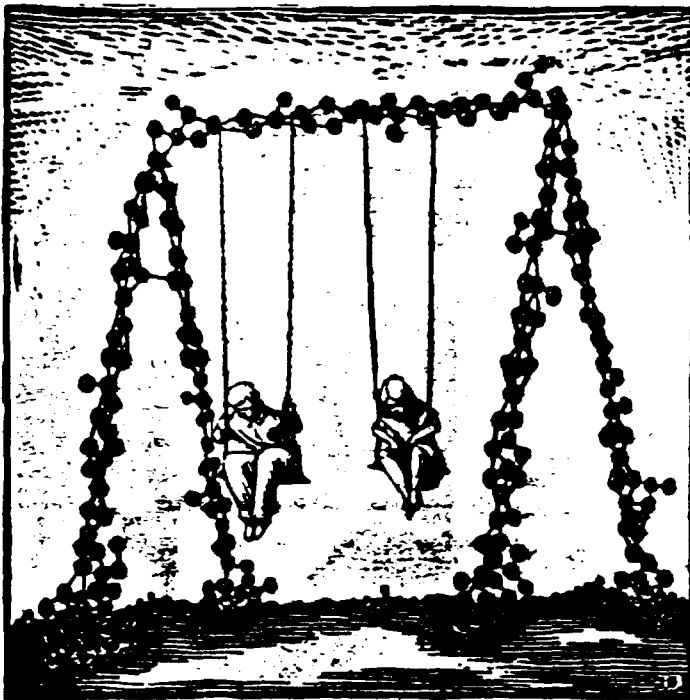


ILLUSTRATION BY BOB DAVIS FOR THE WASHINGTON POST

University of Maryland and a pioneer in X-ray bone-lead studies. "So that's where you have to look."

And that is where the residents of Throop, including the Schortzs, found their answers. The Schortzs family moved into a big, frame Victorian home near the Marjol site in 1979. "We did it because it was such a big place and we had a growing family," Susan Schorts recalled.

They knew about Marjol's smoke, about the mist, about the lead that had been found in the soil of neighbors' yards back in 1975. But they also knew that their daughters, Julie and Diana, had been among the 200 children in town who, as part of the state's assessment of Marjol in 1975, had received blood tests that revealed no problem.

As for the lead-contaminated soil, Schorts said, the state Department of Environmental Resources "told us to cover our lawns with topsoil and replant. The lead, they said, would dissipate in 10 years."

In 1976, after repeated violations, the department ordered Marjol to shut down its lead smelter. In 1982, the entire plant was closed for good. That seemed to be the end of Throop's problem.

But in 1986, the federal Environmental Protection Agency came to town, tested the soil and shocked residents by announcing that the yards of the Schorts home and 80 others were heavily contaminated.

According to the EPA guideline, soil with more than 50 parts per million of lead might

be dangerous. EPA found levels of 2,000 to 19,000 parts per million in Throop. Schorts had an average of 8,000 parts per million in her spacious, tree-shaded yard.

The Marjol site and the surrounding area were designated for cleanup under the federal Superfund law. Beginning in 1988, the yards of the 81 homes were excavated to remove the contaminated soil. One home was declared totally unsafe. Several months ago, a contractor cleaned the interior of 60 homes to remove lead dust.

The cleanup, now estimated at \$18 million, is being paid for by the Gould Corp., which bought the Marjol site after the plant closed.

But while EPA officials acknowledged that soil and homes had been contaminated, they maintained there was no health problem for residents. And, indeed, another round of tests appeared to support that claim: Blood tests conducted on 300 children did not reveal any elevated exposure to lead.

But this time many people here refused to believe everything was all right.

Throop, a modest community of frame and brick homes where traditional values predominate, was not a likely candidate to dispute government experts.

But the shock of being declared a Superfund site a dozen years after the state had said there was no problem weighed heavily on many residents.

Mutoa, Schorts and 40 other families

formed Halt Environmental Lead Pollution, HELP, which persuaded several of the nation's leading experts in childhood lead poisoning, including Rosen, to counsel them. The group rented a van and in late 1989 started ferrying people 120 miles to Rosen's clinic in the Bronx, where he was conducting bone-lead studies.

"I really didn't know what to expect," recalled Rosen, "but I was shocked." More than a third of the 75 Throop residents Rosen had elevated levels of lead in their bones. He decided to go to Throop.

Last June, Rosen and five technicians screened an additional 125 residents here and conducted neurological and learning-development tests.

"The preliminary results indicate that a highly significant percentage of residents across a wide age range have clear-cut evidence of lead exposure that occurred earlier in their lifetime," he said.

Those with the highest level of lead exposure had grown up during the years the Marjol plant was operating. Nearly two thirds of the teenagers who were tested had high lead levels.

Diana Schorts, 16, is among them. Although her mother said she has no medical problems, Rosen's tests found that Diana has 57 parts per million of lead in her bones.

There are no standards yet for how much lead in the bones poses a threat, but Diana's level clearly was remarkable. Todd, the University of Maryland researcher, has found an average of 30 parts per million in lead-smelter workers in Europe.

Lead particles are generally inhaled or ingested, then find their way into the bloodstream and are finally absorbed by the bones. Once locked in the bones, they do not present an immediate threat. But the reserve of the toxin can be released under certain circumstances.

For example, lead is released if a bone is broken, if the individual is bedridden for a long time or if he or she suffers bone disease.

A serious release could occur if Diana were to have a baby, Rosen warned the Schortzs. Because mothers' bones are the source of calcium for the fetus, there is a risk of essentially poisoning the fetus.

Rosen advised the Schorts family to monitor Diana's blood-lead levels and kidney function in future checkups, because lead can easily impair the kidneys.

Pennsylvania officials have little to say about Throop. "Our understanding of the problems of lead are so much greater now than when we initially looked at the problem in 1975," said Susan Wood, a spokeswoman for the environmental resources department. "But it was the state that suggested the EPA go back and take a second look."

Officials at the state Department of Health say that the X-ray technique is experimental and that the result does not demonstrate that a health problem exists. There are no comparable studies to show the bone-lead levels in the general population, department spokesman Robert Fischer said.

Controlling a Childhood Menace

Lead poisoning poses the biggest environmental threat to the young

By LEON JAROFF

Sitting on an examining table at the Children's Hospital in Pittsburgh, three-year-old Shawntea West is smiling and alert, apparently in excellent health. But she is afflicted with the most common of the serious childhood diseases. The mumps? Viral meningitis? Measles? Whooping cough? The answer, says Dr. Herbert Needleman as he draws blood from her arm, is lead poisoning.

During a routine checkup two weeks earlier, Shawntea was found to have a level of 25 micrograms of lead per deciliter of blood. If that toxic level is maintained, it could affect her mental capabilities and result in grave behavioral and physical problems. "She was living in raggedy housing and eating plaster from a big hole in the wall," says her grandmother, who accompanied her. To Dr. Needleman, that is an important clue; it is likely that some of the earlier coats of paint on the wall contained lead. "Make sure she washes her hands before she eats," he says, "and don't let her eat dirt or plaster."

Shawntea's case is hardly unique. From 3 million to 4 million American children—or about 1 out of every 6—under six years old have lead poisoning. While only 7% of young children from medium- and high-income families are afflicted, it affects 25% of poor white children and an incredible 55% of those from impoverished black families.

These startling statistics are contained in a "strategic plan" developed by the Department of Health and Human Services. Though HHS warns that the effects of exposure to even moderate amounts of lead are more pervasive and long lasting than was previously thought, its plan optimistically outlines a program for eliminating lead poisoning in children within 20 years. Dr. Needleman, a pioneer investigator of the disorder at the University of Pittsburgh medical school, feels that the goal is attainable. "Lead poisoning is the most severe environmental disease in this country," he says, "and it is totally preventable."

But total prevention could be an elusive goal. Americans are constantly exposed to lead, particularly from old, crumbling paint. The dense metal escapes into the air when used in industrial processes and can leach out of crystal glassware and imported pottery into food and drink. Lead solder in old plumbing often contam-

inates tap water. Government regulations have phased out most leaded gasolines, but the residue from the exhausts of millions of vehicles in years gone by still poisons the soil near major highways. And though lead-based paints were banned for most uses in 1977, a 1988 Public Health Service report revealed that 52%, or 42 million, of the nation's households have layers of lead-based paint on their walls and woodwork.

Even in minute quantities, lead is highly toxic. Some historians suggest that widespread lead poisoning contributed to the decline of ancient Rome, where the metal was used for tableware, weapons, cosmetics and water pipes in aqueducts, as well as in the processing of wine. Its prevalence, some conjecture, may have caused sterility, miscarriages and even insanity, particularly among members of the upper classes, who imbibed heavily.

Ingested or inhaled, lead enters the bloodstream, where it inhibits the production of hemoglobin, which red cells need to

carry oxygen. It also locks on to essential enzymes in the brain and nervous system, inactivating them. Symptoms of lead poisoning include abdominal pains, muscular weakness and fatigue; severe exposure can cause nervous-system disorders, high blood pressure and even death.

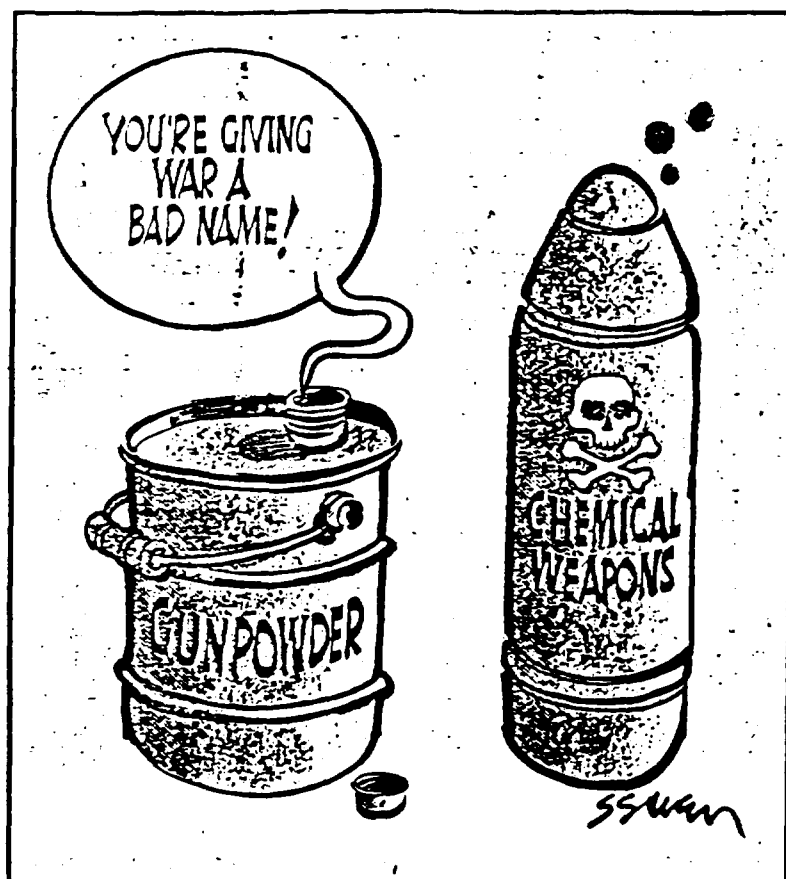
While adults, especially those in certain occupations and industries, are vulnerable to lead poisoning, small children are at the greatest risk. Dr. Joseph LaDou of the University of California at San Francisco explains that children are "exquisitely sensitive" to the toxic metal because their nervous systems and brains are still developing.

Does an effective treatment for lead poisoning exist? Yes, provided it begins before too much damage is done. Doctors get the lead out with a process called chelation, using drugs that bind to the metal in the bloodstream, allowing it to be flushed out in the urine. The drug of choice has been calcium-disodium EDTA, but it is usually administered intravenously over sever-



Flakes and dust from old, deteriorating paint are the most commonplace culprits

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SHERRY ROBERTS
Guest columnist

USA Today
DATE UNKNOWN

All weapons are weapons of terror

GREENSBORO, N.C. — My husband defines chemical warfare as letting me in the kitchen. He is sure some of the things I do to hamburger are against the Geneva Convention.

My cooking, he says, is a weapon of terror — still capable, after 15 years of marriage, to take him by surprise and render him helpless.

He has not yet begun wearing 3.75 pounds of protective gear to the dinner table or hired a descendant of the Borgias to taste-test the meat loaf. But it is only a matter of time.

Americans have chemical and biological warfare on the brain. Almost everyone has a loved one, friend or acquaintance cooing up to a gas mask in the Persian Gulf. On television, we watch Israeli families and wonder: What must it be like to check the diaper bag for formula and gas masks before herding the children into sealed shelters?

Unlike some nationalities, we are unaccustomed to living with unseen threats.

Only in movie theaters have we had to worry about terrorists dumping anthrax bacteria into a city's water supply.

And it is unconscionable that our leaders would unleash mustard and nerve gas on their own populace (as Saddam Hussein did on the Kurdish population in northern Iraq).

It must be the John Wayne in us. We revere



Sherry Roberts is a free-lance writer.

sensals of poisonous chemicals and deadly bacteria weapons of terror.

But in reality, chemical weapons, which can be cooked up in any hole in the wall in the world, are weapons of terrorism. They twist our hearts and fire our anger, because we can't see them, because they fuel fear, and because they usually do more damage to the innocents than the warriors.

When will we learn that every weapon is a weapon of terror — from the slingshot to the Saturday night special to the nuclear bomb?

There is no honor among armaments. Death is death, whether it comes from a bullet that shatters the bone or a gas that turns the blood in the veins to sludge.

the aboveboard war. We like to be able to see what's coming. We were baffled and shaken by the jungle war, the guerre de guerrilla, the conflict that delivered death via a bomb in a baby's diaper.

We consider terrorism the cowardly act and, so, delineate between conventional and unconventional weapons. We call such armaments of poisonous chemicals and deadly bacteria weapons of terror.

PETER B. GEMMA JR.
An opposing view

No treaty can control chemical weapons

ARLINGTON, Va. — It is naive to believe that chemical and biological weapons can be wished away by positive thinking or paper treaties. Simplistic editorialists, grandstanding politicians and deluded liberals are dangerously wrong in advocating that the USA abandon or even lower its defenses against chemical or biological warfare.

Although "civilized" nations have signed protocols against the use of chemical and biological weapons as early as 1925 and as recently as three years ago, chemical warfare particularly is, regrettably, a growth industry. Because these barbaric weapons are cheap to manufacture (their ingredients are easy to obtain and difficult to track), intelligence agencies estimate between 22 and 38 nations have or will have the capability to produce chemical weapons.

Since ancient times, chemical weapons have been deployed. Recent examples include Egypt, in Yemen, 30 years ago; communist Vietnam against Cambodia 20 years ago; in Afghanistan by the invading Soviet army 10 years ago; and by Iraq just last year. Obviously, no treaties can protect us from those hell-bent to ignore them.

Chemical weapons are crudely low-tech and even strategically ineffective. Gulf coalition military advisers predict less than a 5% casualty rate from a full-scale Iraqi chemical attack. A recent Heritage Foundation report concludes that U.S. troops "are better equipped and vastly better trained to fight in an environment poisoned by chemical weapons than are Iraqi forces."

So why are chemical weapons regularly deployed? First, the psychological effect of this "poor man's atom bomb" through limited use — even the threat of its deployment — has always been effective. Second, Third World military tactics and moral values are vastly different from the West's.

In contrast, Uncle Sam has not been producing offensive chemical or biological weapons since 1969. In fact, due to Reagan-era defense policies, the Soviets conceded to join with us in destroying over 80% of our combined aging stockpiles within the next 10 years.

Recently, less than 1% of our military budget has been devoted to building chemical and biological warfare shields — not swords — in response to this real and present threat. Obviously, neutralizing agents are needed to protect lives yet, incredibly, some are calling this research and development work uncivilized. Necessary. Those voices must not drown out the moral and practical need of defense research.

After World War I, the international agreement to ban chemical weapons came about through a military decision, not an ethical judgment. The warring parties had demonstrated their ability to use poison gas effectively, as well as the will to do so. Clearly, the lesson learned there and since then is that peace through strength, not treaties, is the best deterrence against aggression.



Peter B. Gemma Jr. is a freelance writer.

QUOTELINES

"There is no other course than the one we have chosen, except the course of humiliation and darkness, after which there would be no bright sign in the sky or brilliant light on earth."

— Saddam Hussein, Thursday on Radio Baghdad

"He is inviting the ground offensive to take place. . . . He is ready to sacrifice his country, his economy."

— Kuwaiti U.N. Ambassador Mohammad Abulhasan

"I pray to God it's not going to happen, but, yes, I'm convinced they're going to use chemicals."

— Col. Samuel Raines, cmdr., 7th Engineer Brigade

"Chemical weapons cause terror. They may not cause serious casualties."

— Edward Foster, London's Royal United Services Inst.

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al days in a hospital. The Food and Drug Administration has approved for use in children an oral drug called DMSA, which does not require hospitalization. But effective as chelation is, doctors point out that medical treatment cannot substitute for a safe environment. "Prevention is the key," says LaDou. "It's a dream that we can find drugs to protect us from environmental hazards."

The effects of low-level lead poisoning in children are not immediately obvious, but they can have a devastating, permanent impact. Exhaustive tests conducted by Dr. Needleman on 2,300 suburban Boston schoolchildren confirmed that even modest lead exposure lowers IQs, impairs memory and reaction time and affects the ability to concentrate. "This is an information society," says Karen Florini, a Washington attorney with the Environmental Defense Fund. "When your educational and social skills are hurt early on, you aren't likely to become a productive member of society." John Rosen, a professor of pediatrics at the Montefiore Medical Center in New York City, agrees: "The fact that we have a pervasive problem that has the capacity to rob young children of their potential forever is, in 1991, a national disgrace."

By far the highest incidence of lead poisoning is found in children who live in older homes with lead-based paint that is peeling. For many years public health officials assumed that most cases were the result of toddlers' eating the sweet-tasting chips and flakes. More recently, however, researchers have recognized that dust from deteriorating paint, settling onto windowsills, furniture and carpets, poses a more pervasive threat. "It's the teddy bear lying in the corner on lead-laden dust that the children are touching," says Rosen. "Putting fingers in their mouth is normal activity for kids. The lead goes from their toys, their clothes, their furniture into their mouths."

New perceptions about the toxicity of lead have convinced many experts that the currently accepted danger level of 25 micrograms per deciliter of blood is too high. HHS favors lowering the warning level to 10 micrograms. Testing blood levels, however, may be an imperfect index of danger. "Measuring the blood is convenient and often useful," explains Richard Wedeen, a neph-

rologist at a V.A. hospital in East Orange, N.J., "but it may not be where the lead is." The problem is that only a few months after entering the bloodstream, much of the lead has migrated to the bones, where it can persist for decades without doing damage. But it can re-enter the bloodstream and cause trouble, especially under stress-

ful conditions—surgery, infection, emotional upheaval.

Consequently, some doctors analyze a patient's bones or teeth to gauge the extent of lead poisoning more accurately. In young children, baby teeth that have fallen out can be tested for lead content. This procedure is obviously impractical for adults, who can be tested by new, noninvasive X-ray fluorescence techniques. The X-rays penetrate tissue and excite lead atoms in the living bone, causing them to emit radiation that reveals lead levels.

Can lead poisoning be eradicated as a threat to children as, say, polio has been? Yes, says the Environmental Defense Fund's Florini. "We don't need to invent new technologies to remove lead. We know how to do it. What's needed is money." Authors of the HHS strategic plan apparently agree. They call for a four-point effort that requires 1) establishment of national surveillance for children with elevated blood levels of lead; 2) elimination of leaded paint and contaminated dust in housing; 3) reduction of children's exposure to lead in water, food, air, soil and places of play; and 4) an increase in community programs for the prevention of childhood lead poisoning.

The plan could cost as much as \$10 billion over the next 10 years, but its authors claim that eliminating lead from all pre-1950 housing would alone save \$28 billion in medical expenses and other costs. Though the Office of Management and Budget has raised allotments for lead-screening programs from only \$4 million in 1990 to a proposed \$41 million for 1992, it is balking at further expenditures.

Environmentalists and health officials are determined not to lose a historic opportunity to stop lead poisoning in America. The Romans, notes nephrologist Wedeen, chose to ignore warnings by the architect Vitruvius, who declared that the aqueducts' lead pipes were fit for carrying only sewage, not drinking water. "That is not unlike what is going on today," says Wedeen. "People know about the dangers of lead, but they just don't do very much about it." If the HHS recommendations are adopted, the lessons of history may finally pay off. But that, as the saying goes, is far from a lead-pipe cinch. —Reported by Ann Blackman/Pittsburgh and Janice M. Horowitz/New York

SOME UNEXPECTED SOURCES OF TROUBLE

POTTERY

Colorful glazes on many of the ceramic pitchers and plates imported from Italy and Mexico both lure and endanger the unwary purchaser. Lead can leach from the glaze into food and water.



DON'T DRINK THE WATER

Though it is now illegal to use lead pipes or copper pipes joined by lead solder for carrying drinking water, lead joints remain in many older plumbing systems, imparting their toxic atoms to the water.



A CLEAR AND PRESENT DANGER

Lead oxide gives these crystal glasses their brilliance and heft. But recent tests show that wine left sitting in lead-crystal wineglasses or decanters gradually absorbs lead from them.



AS WE SEE IT

Sunday Chronicle

Muskegon, MI

2-24-91

Make the Bofors incinerator safe; later, move it out

It's hardly news that the Bofors-Nobel Cleanup site in Egelston Township, where more than 100,000 cubic yards of extremely toxic soils and sludges lie waiting to be disposed of, is among the worst in the nation.

In fact, it's an old story. The hazardous material was built up since the early 1960s via open sluiceways developed by Lakeway Chemicals Co. to transport wastes from the Evanston Avenue plant to a series of storage lagoons out back. Today, the estimated removal cost is a whopping \$71 million.

What's of interest now is that the state and federal governments believe the cheapest and most effective way of neutralizing most of those wastes is by incineration.

Although the word, by itself, has the power to antagonize environmentalists and concerned citizens into action, there has been no great groundswell of opposition so far. One recent hearing drew fewer than 10 people, although the number will no doubt rise in future hearings. The type and design of the incinerator haven't been established yet, and we'll have more to say when details are set forth and debated publicly.

At this point, we don't necessarily object to the use of some form of incineration, mainly because the sludges are considered too toxic to transport elsewhere and it's quite clear that they can't just stay where they are.

But whatever the type, we believe that its fail-safe mechanisms should be as reliable as modern technology can make them, and that the device be held to the strictest possible air emission standards. It's bad enough that these chemicals got into the ground; it would be doubly awful if they got into the air needlessly.

And early on, we want to state strongly that, whatever form it finally takes, this incinerator should have wheels. When the job is done five years from now, the thing should be rolled down Evanston Avenue to some new site where it is needed, not left to burn toxic gunk delivered from other sites.

An indefinite stay does not seem a likely prospect. As proposed, the incinerator will be both mobile and "site-specific," that is, tailored to the toxicity and type of materials to be disposed of. So it's probably going to be easier to move to a new site rather than trucking similarly hazardous wastes here, thus opening a whole new round of permits and public hearings.

At least one letter writer also has expressed a desire that the incinerator be dismantled and removed afterwards, among other concerns. Such concern brings to mind a time, back in the mid-1980s, when officials of what was then Bofors Nobel Inc. proposed using an incineration-like process to neutralize these same sludges. But the venture was considered too costly to do privately without bringing in outside wastes, and it was never built.

Most of the work so far has been done under the auspices of the state Department of Natural Resources, which last year completed preliminary studies of the site and pointed to incineration as a likely part of the remedy.

To augment the state's efforts, we crusaded more than 10 years ago for what we saw as a critical need for federal "Superfund" dollars. We pointed to the massive buildup of carcinogenic compounds like benzidine and DCB, which had seeped from the lagoons into Black Creek and hence into Mona Lake. The EPA ultimately agreed, and in 1989 placed the Bofors site on the National Priorities List qualifying it for Superfund dollars.

Well, better late than not at all. The move to bring an incinerator onto the site shows us that the government sees the presence of these soil-saturating, cancer-causing chemicals as a serious and continuing threat, one requiring a serious remedy.

That level of commitment is welcome, because right now a series of purge wells is all that stands between all those chemical wastes and Black Creek, Mona Lake and Lake Michigan.

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A8 THURSDAY, FEBRUARY 21, 1991

Washington Post

Administration Plans Cleanup of Toxic Lead

\$1 Billion Effort Would Target 'Silent Killer'

By Michael Weiskopf
Washington Post Staff Writer

The Bush administration is preparing a \$1 billion plan to cleanse the environment of potentially toxic traces of lead in a far-reaching effort to protect millions of children from the risk of physical and mental retardation, officials said yesterday.

Having survived last-minute chat objections by the White House, the program calls for stripping lead paint from old housing units, cleaning drinking water of dissolved lead from pipes and solder, identifying and removing lead-contaminated soil, and testing and treating children for high levels of lead in their blood.

The plan represents a belated government response to what the medical community has been urging for years. Known as the "silent killer," lead reaches toxic levels in the blood of 17 percent of urban preschool children, according to the Public Health Service. Even at lower concentrations, the toxic metal can cause behavioral and developmental problems, scientists report.

Herbert Needleman, a pediatrician at the University of Pittsburgh and a leading researcher of lead dangers and frequent critic of government policy, called the plan a "break-through step. . . For the first time, they're talking about wiping the disease out by going to the source."

The administration plan—expected to be unveiled today in Congress—assigns roles for the Department of Health and Human Services, the Environmental Protection Agency and the Department of Housing and Urban Development.

"We are proposing to use every arrow in the quiver to get at this problem," EPA Administrator William K. Reilly said yesterday, releasing his agency's part of the plan.

The administration plan recognizes lead as the largest environmental danger to children today. But researchers also have blamed it for

raising blood pressure in adult males, complicating pregnancies and harming fetal development.

The government began regulating the most obvious sources of lead years ago when the metal was considered a danger chiefly at high concentrations. Lead-based paint was banned in 1971 to protect inner-city children from the risks of eating paint chips. Old lead-based paints, however, are still peeling off in many homes. The EPA has phased down lead additives in gasoline since the mid-1970s.

As scientists documented the dangers of lead at much lower levels than previously considered harmful, they underlined the need for more thorough removal of the ubiquitous element.

A common industrial material for centuries, lead is almost impossible to avoid today. The most common source of exposure is old leaded paint. According to HUD, 57 million residences contain leaded paint, 10 million of them housing children under age 7.

Most of the \$974 million that HHS expects the plan to cost in the first five years would go to ridding houses of leaded paint. The EPA and HUD plan to set up a \$4 million program to train workers how to safely remove the wall coverings.

Another major source of lead in the environment is soil and dust, contaminated by crumbling lead paint and years of fallout from the exhaust of cars burning leaded gasoline. Children playing outdoors can kick up and inhale lead dust. The EPA is conducting studies in Baltimore, Boston and Cincinnati to determine how best to identify and remove lead-laced soil and dust.

For drinking water, which picks up lead from the plumbing system, the EPA plans to adopt new standards requiring corrosion control, according to Reilly.

Lead screening at maternal and child health centers is expected to cost \$164 million over five years.

TECHNOLOGY & HEALTH

EPA Issues Rules to Reduce Lead Levels In Drinking Water of American Homes

By BARBARA ROSEWICZ

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON — The government is launching a major effort to get harmful lead out of U.S. drinking water, though some households won't get safe tap water for more than 20 years.

The Environmental Protection Agency has issued rules that will reduce the undisputed health risks posed by lead leaching into tap water in thousands of homes at a cost to water users of \$500 million to \$800 million annually.

Municipal water suppliers say the regulations are reasonable. But environmentalists and lawmakers like Rep. Henry Waxman (D., Calif.), who was instrumental in enacting the 1986 Safe Drinking Water Act, complain the rules don't offer quick-enough and sure-enough protection, especially for children.

The first phase of the rules, which put into effect the 1986 law, are expected to yield the most results. The EPA is ordering water suppliers for the first time to treat drinking water with harmless chemicals to reduce its acidity so that less lead corrodes from pipes and solder.

Lead pipes and solder within homes or lead service lines connecting homes to water mains are chiefly to blame for allowing the toxic metal to contaminate tap water. By 1993, all suppliers will be required to start testing tap water inside a certain number of homes for dangerous lead levels. Almost half of the 80,000 residential water systems in the U.S. will likely have to treat their water.

After 1999, if tap water continues to register lead levels of more than 15 parts per billion—lower than the previous standard of 50 ppb—water suppliers must replace underground lead service lines. The EPA rules allow 15 years for the gradual replacement of the underground lines, which means harmful lead levels could persist in some homes until 2014.

The EPA estimates that 8,000 water systems, mostly in the Northeast and Midwest, may have to replace lines at a cost of \$3 billion to \$4 billion, or as much as \$15 more per household annually if costs are spread across a community. Water suppliers, however, warned there are additional costs that homeowners may be forced to pay to have their lines replaced.

EPA deputy administrator F. Henry Habicht defended the agency's gradual compliance schedule. "Ninety-five percent of the benefits of the rule will be achieved within the first six years" through water treatment, he said. He added the rules will lead to the most significant reduction of lead exposure since the EPA ordered lead removed from gasoline.

But public health advocates are impatient to clean up drinking water, which accounts for as much as 20% of the lead ingested by children, who are the most vulnerable to its toxic effects. Scientists have found that low levels of lead previously considered safe can cause high blood pressure and strokes in adults and can harm the mental ability, development and hearing of children.

Other significant sources of ingestion are from lead in paint and soil.

Both Rep. Waxman and certain environmental groups have long promoted water treatment as the quickest, most effective means of reducing how much lead dissolves in tap water. Cities such as Boston and Seattle already are treating their water—with chemicals like lime or phosphates—to reduce its corrosivity or coat the inside of pipes to keep the metal from leaching into the water.

Despite agreement with the EPA's water-treatment approach, critics complain there are too many loopholes, delays and lack of enforcement powers. Overburdened states, not the EPA, will be in charge of guaranteeing compliance.

Karen Florini, an attorney with the Environmental Defense Fund, said as many as 10% of households in some places would get no relief from high lead levels because of a loophole. And Rep. Waxman threatened to push through new legislation to force the EPA to set a stricter enforceable health standard for lead levels in water.

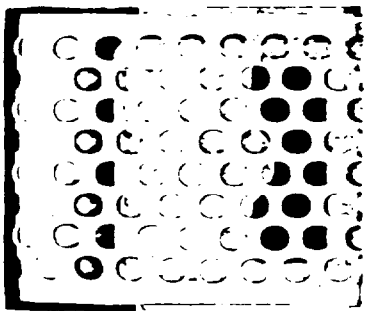
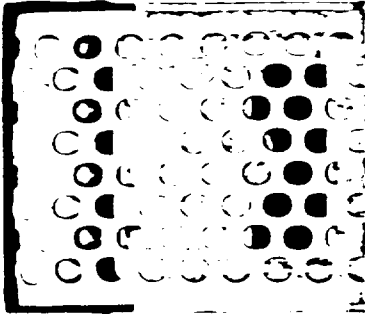
Polaroid Corp.

Polaroid Corp. unveiled three products at its annual shareholder meeting yesterday aimed at forwarding its advance into electronic imaging technology.

The instant photography concern's new products include a scanner, dubbed the Digital Scanner CS-500, for making computerized images from photographs. The scanner, which will work with Apple Computer Inc.'s Macintosh II computer systems, will be available in the third quarter.

Polaroid also introduced a printer, the CI-700, that creates color photographs from electronically stored images and a film recorder, the CI-5000, that creates slides from electronic images.

Polaroid has been counting on electronic imaging products to help counteract declining instant-camera sales, which have been cut by competition from 35mm cameras and home videotape recorders. The company, which is based in Cambridge, Mass., said about half of its research and development budget now is spent in the electronic imaging area.



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Ink on bread bags may pose lead risk

By Adrienne Drell

Consumer Writer

Bread may be the staff of life, but according to a Consumer Reports study, the inks used on the labels of many plastic bread bags can be a health hazard.

A Consumer Reports test of 84 colored bread bags found that more than 40 percent contained "substantial" amounts of lead in their labels. In most of those cases, the level was far above the lead allowed in house paints, exceeding 1,000 parts per million, Consumer Reports stated.

The metal cannot contaminate contents unless a bag is turned inside out and reused to hold food. Then the metal flakes off on the food products, the magazine says in its March issue.

Few of the breads studied were identified, said Consumer Reports spokesperson Rana Arons.

"It was a random local selection (in New York), and we didn't want to single out brands," Arons said. "But we feel the problem is widespread and so we want to alert people to the potential hazards of reusing these bags for food purposes."

One bag tested had an estimated 100 milligrams of lead in its printing. Even a "minute fraction" of the lead rubbed off onto food would exceed the maximum daily intake considered safe for young children, according to Consumer Reports.

Bread bakers and packagers said the lead content in labels has been dramatically reduced or eliminated and no problem exists if bags are used as intended.

"The bread bags are not designed for people to turn inside

out and use as lunch bags," said Bert Lewis, of Metz Baking Co. in Sioux City, Iowa. Metz produces such brands as Holsum and Chicago Hearth.

Charles Romanaki, chief operating officer of Dallas-based Princeton Packaging, the country's largest producer of bread wrappers, said that as of Jan. 1, "minimal lead" is being used in label pigments.

Princeton Packaging chemist Ronald Bedard said that at one time, 600,000 parts of lead per million were allowed, but under new industry standards, only 600 parts per million will be permitted. He said his company's bread wrappers only have 2 to 6 parts of lead per million.

Consumer Reports said Pepperidge Farm, a major bread producer, told the magazine last fall that leaded inks were replaced by water-based inks, but tests on recently purchased Pepperidge Farm bags still turned up "significant amounts of lead."

Elizabeth Gabriele, a spokeswoman for Pepperidge Farm, said that after a trace amount of lead was found by the bakery's own analysis, a bag supplier suggested it was leftover residue from printings done with leaded inks.

"Since that time, our supplier has assured us that they will eliminate this problem," she said.

At least one chain of supermarkets, Jewel Food Stores, reports using water-based inks.

Judy Plaryk, a spokeswoman for the Illinois Department of Public Health, said state law bars the reuse of plastic bread bags by restaurants, hospitals and other food-service establishments for sanitary reasons.

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LEGACY OF LEAD: AMERICA'S CONTINUING EPIDEMIC OF CHILDHOOD LEAD POISONING

A Report
and Proposal
for Legislative Action

*Give me a call
if you would like
this report*

Environmental Defense Fund
Washington, DC

March 1990